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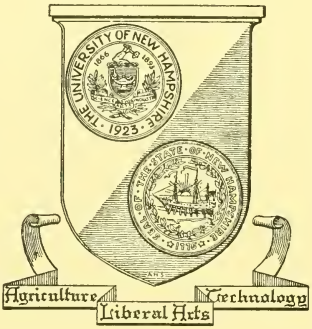

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Distributing and Handling Grain-Feeds in New Hampshire

I. Characteristics of Milling and Distributing Firms

By
George B. Rogers and Harry C. Woodworth

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Distributing and Handling Grain-Feeds in New Hampshire

I. CHARACTERISTICS OF MILLING AND DISTRIBUTING FIRMS

by

George B. Rogers, Research Economist

and

Harry C. Woodworth, Agricultural Economist*

1. Introduction

THE ASSEMBLY and distribution of grain-feeds is a vital link in the agriculture of New Hampshire. Heavily dependent upon the mixed-feeds industry are the poultry and dairy industries which together account for almost four-fifths of the State's agricultural income.

Less than two percent of the tonnage of grains and mixed feeds used annually in the State is home-grown. As a deficit feed-producing area† New Hampshire must draw the bulk of its feed needs in such a way as to obtain adequate nutritional standards for its livestock at a cost not disadvantageous to its competitive position. Obviously, grains and mixed feeds should logically cost more per unit in this area than in surplus grain areas, other things being equal, but the difference in cost should not exceed the selling advantages accruing to New Hampshire producers through such things as nearness to market, higher quality, and volume.

It is the mutual concern of the grain companies and their outlets and their farmer customers to see that the feed needs of New Hampshire livestock are supplied at the minimum practicable cost. It is equally important that the efficiency of grain handling on the farm, as well as in the various stages of distribution, keeps pace with that in other areas.

Therefore, the objectives of this study were twofold: (1) to appraise the present system of assembling, distributing, and handling grain-feeds; and (2) to explore means of effectuating greater efficiency in that system.

2. The Market for Grain-Feeds

BEFORE PROCEEDING to a descriptive analysis of the assembly, distribution, and handling of grain-feeds, delineation of the needs to be met is in order. How large is the market for mixed grain-feeds in New Hampshire? What livestock enterprises are the major users? What are the area differences? What is the influence of size of consuming units?

---

* Professor Woodworth originated this study and initiated much of the field work prior to his death on September 18, 1953.

† Askow, W. R., and V. J. Brensike, *The Mixed Feeds Industry*, Marketing Research Report No. 38, Bureau Agricultural Economics, U.S.D.A., May, 1953, Table 5 and p. 19. Of 16 states having the smallest production of mixed feeds, four, including New Hampshire, were deficit with respect to all seven major feed ingredients.

Quantities Purchased.

It is estimated that in 1949 there were over 281,000 tons of grain-feeds purchased in New Hampshire. Almost 60 percent of this total was needed in three counties: Hillsboro, Rockingham, and Merrimack (see Figure 1), which are by far the most important poultry areas in the State, as well as of major importance in dairying.

Poultry feed requirements accounted for 182,000 tons or about 65 percent of the total. Of the remainder of almost 100,000 tons, needs for milk cows accounted for about two-thirds and other cattle and calves about one-seventh. Thus, poultry and cattle together required all but about 20,000 tons of total feed purchases in 1949, or 93 percent.

Value of Purchases.

According to 1950 census data, New Hampshire farmers paid $22,619,737 for feed for livestock and poultry in 1949. Purchases by specialized poultry farms accounted for $13,544,544 and purchases by specialized dairy farms for $6,596,686, or a total of $20,141,230. Figure 2 shows the total dollar expenditures for feed for livestock and poultry by counties and economic areas, and by specialized dairy and poultry farms by economic areas, for 1949.

The preceding census figures are for all feeds (grain, hay, etc.) purchased. It is estimated that 1949 purchases of grain-feeds alone in New Hampshire amounted to over $20 million. This represented about 48 percent of the total gross income from sales of livestock and livestock products. For poultry, purchases of grain-feeds usually account for 65-70 percent of per unit production costs, while for milk production, only 20-25 percent of unit production costs are for purchased grain-feeds.

Size of Feed-Consuming Units.

Having examined briefly the size and area distribution of the market for grain-feeds in New Hampshire from the standpoints of quantity and value, a short discussion of the sizes of consuming units is in order.

Table 1 shows some measures of grain-consuming livestock in New Hampshire, both on an aggregate and per farm basis, as derived from 1950 census data. These figures again indicate the predominance of poultry (mostly chickens) and cattle (mostly milking cows and other dairy stock) among the grain-consuming livestock population. Average numbers per farm reporting indicate a relatively larger average unit size for chickens, eggs, turkeys, and cattle than for other categories, but such averages do not truly reflect the unit size distribution. Neither are the census classifications on chickens, eggs, and turkeys mutually exclusive.

For a more revealing look at the unit characteristics for the New Hampshire market of grain feeds, there are presented in Table 2 the 1950 census distribution of farms by numbers of cows, chickens sold, and chicken eggs sold. These data show that New Hampshire has relatively more smaller herds (under 10) of cows than either New England or the United States. With respect to chickens sold, there is little difference between New Hampshire and the New England average; both considerably exceed the United

Table 1. Measures of Grain-Consuming Livestock in New Hampshire, 1950

	Total Number	Farms Reporting	Average Number per Farm Reporting
Chicken eggs sold	24,780,014[1]	4,417	5,610.1[1]
Chickens sold	4,913,947	3,934	1,249.1
Chickens on hand April 1, 1950	2,079,705	6,673	310.2
Turkeys raised	97,734	306	319.4
Turkeys on hand Jan. 1, 1950	5,831	113	51.6
Ducks raised	4,323	343	12.6
Geese raised	1,113	140	8.0
Guineas raised	85	7	12.1
Pheasants raised		3	
Pigeons raised		1	
Cattle, all ages	109,658	8,287	13.2
Milk cows	56,685	7,585	7.5
Horses	8,614	4,375	2.0
Mules	110	68	1.6
Hogs and pigs, all ages	12,752	2,165	5.9
Sheep and lambs, all ages	7,423	489	15.2

[1] Dozens

Source: 1950 Census of Agriculture

States average in the proportion of farms raising larger flocks. Taking chicken eggs sold as a measure of laying flock size, it is apparent that there are relatively more New Hampshire farms with larger flocks than in the other areas shown.

Irrespective of the preceding comparisons, however, it is clear from the New Hampshire figures themselves that any feed distributor is likely to make the majority of his stops or sales (number, but not necessarily tonnage) to small units. See Table 2.

Potential Requirements.

It is possible to estimate the size of the potential market for grain-feeds in any one year by applying per unit feed requirement estimates to the appropriate U.S.D.A. series on numbers on hand, raised, and produced. One such series of per unit feed requirements is shown in Table 3.

Using the preceding rates of feeding, and including a correction for grain produced on farms, the figures for Table 4 were derived. These data show the increasing importance of poultry production from 1949 to 1953, and correspondingly the larger share of the feed market which poultry-feeds constitute. This is particularly true of chickens, commercial broilers, and turkeys. Relative declines from 1949 to 1953 were indicated for work animals, milk cows, other cattle and calves, hogs, and laying hens and pullets. Absolute declines were indicated for work animals and hogs.

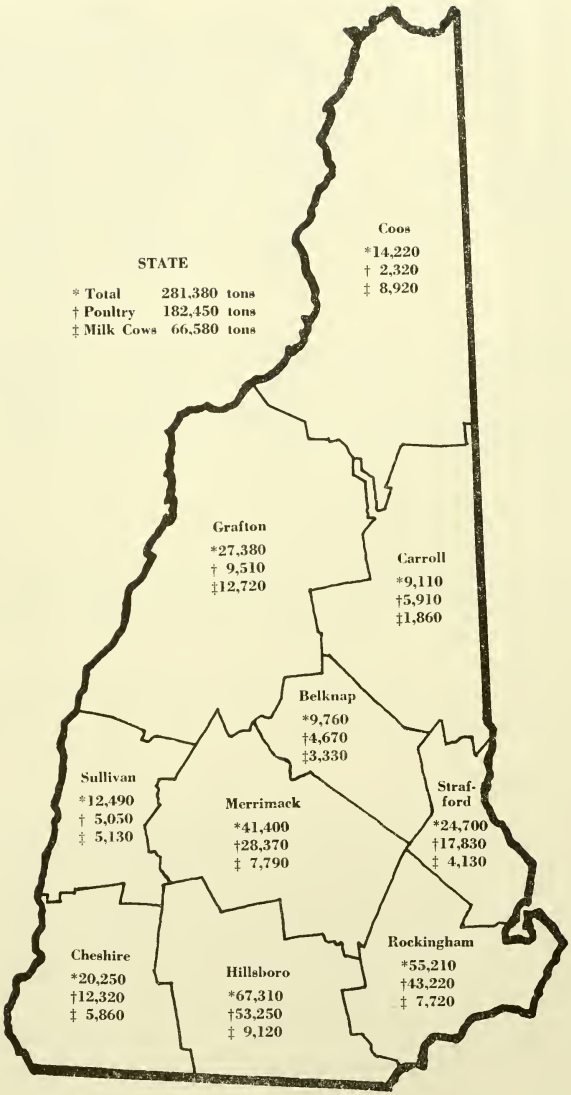

Figure 1. Estimated tons of grain-feed purchased in New Hampshire by counties in 1949.

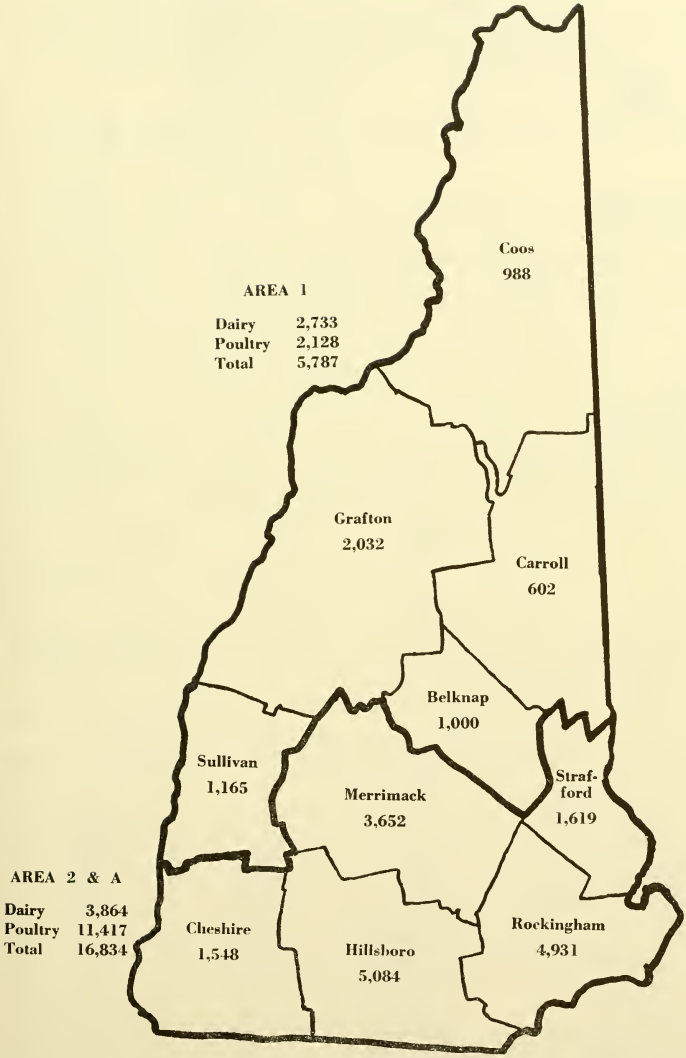

Figure 2. Expenditures for feed for livestock and poultry in New Hampshire by counties in 1949 (thousands of dollars).

Table 2. Farms Reporting Cows, Chickens Sold, and Chicken Eggs Sold, Distributed by Unit Categories, 1950 Census

Farms Reporting Cows, Including Heifers that Have Calved, by Numbers of Cows, Percent Distribution

Area	Number of Cows				
	1 - 4	5 - 9	10 - 49	50 - 99	100 & over
	(percent of farms)				
U. S.	53.3	19.7	24.9	1.3	0.8
New England	50.6	12.5	35.0	1.7	0.2
New Hampshire	57.4	14.5	27.4	0.6	0.1

Farms Reporting Chickens Sold, by Numbers Sold, Percent Distribution

Area	Number of Chickens				
	Under 400	400 - 799	800 - 1599	1600 - 3199	3200 & over
	(percent of farms)				
U. S.	92.7	3.3	1.5	0.9	1.6
New England	61.7	11.9	10.3	7.2	8.9
New Hampshire	59.1	13.4	12.0	7.4	8.1

Farms Reporting Chicken Eggs Sold, by Numbers of Dozens Sold, Percent Distribution

Area	Number of Dozens of Eggs		
	Under 1600	1600 - 4999	5000 & over
	(percent of farms)		
U. S.	85.0	12.3	2.7
New England	63.0	15.6	21.4
New Hampshire	60.0	15.5	24.5

Source: 1950 Census of Agriculture

Table 3. Per Unit Feed Requirements for Various Classes of Livestock[1]

Class of Livestock	Time Period	Unit	Feed Requirements per Unit
			(pounds)
Horses, mules, colts	Year	Head	1,500
Milk cows	Year	Head	1,930
Other cattle and calves	Year	Head	700
Ewes	Year	Head	75
Hogs	Market age	Cwt.	640
Hens and pullets	Laying year	Head	85
Chickens raised	Laying or market age	Head	22
Commercial broilers produced	Market age	Head	12
Turkeys raised	Market age	Head	74
Turkey breeder hens	Hatching season	Head	130

[1] Except for turkey breeder hens, unit requirements taken from *Productive Capacity of New Hampshire Agriculture - 1955* (mimeographed).

Table 4. Numbers of Grain-Consuming Livestock and Estimated Feed Requirements, New Hampshire, 1949 and 1953

	Numbers of Grain-Consuming Livestock		Grain-Feed Requirements Tons		Percent Distribution	
	1949	1953	1949	1953	1949	1953
	(1000)	(1000)				
Horses, mules, colts (head)	11.0	7.0	8,250	5,250	2.87	1.62
Milk cows (head)	69.0	70.0	66,585	67,550	23.18	20.82
Other cattle and calves (head)	46.0	50.0	16,100	17,500	5.60	5.39
Ewes (head)	4.0	5.0	150	187	.05	.06
Other sheep and lambs (head)	3.0	3.0	75	75	.03	.02
Hogs (cwt.)	42.6	30.2	13,648	9,664	4.75	2.98
Hens and pullets (head)	2,389.0	2,552.0	101,532	108,460	35.36	33.44
Chickens raised (head)	5,114.0	6,033.0	56,254	66,363	19.58	20.45
Commercial broilers produced (head)	3,362.0	7,261.0	20,172	43,566	7.02	13.43
Turkey breeder hens (head)	7.0	7.0	455	455	.16	.14
Turkeys raised (head)	109.0	145.0	4,033	5,365	1.40	1.65
Total grain-feed requirements[1]			287,254	324,435	100.00	100.00
Corn and oats for grain[2]			5,424	4,776		
Purchased grain-feed requirements			281,830	319,659		

[1] Preceding figures do not include miscellaneous poultry or pets, for which yearly figures on numbers are not available.

[2] Do not include small amounts of other grains, not separately reported for New Hampshire by U.S.D.A. Agricultural Marketing Service.

3. Assembling, Milling, and Distributing to Retail Outlets

IT WAS NOT a purpose of this study minutely to analyze the feed industry from the standpoint of mill location and operation or milling practices and costs, but it is pertinent to the study to observe briefly such locational and institutional factors as bear upon the pattern of feed distribution and handling within the State. This section briefly treats assembling, milling, and distributing to retail outlets before proceeding to policies, practices, terms, and retail outlet characteristics.

The gathering of all the ingredients which go into modern grain-feeds, the blending of these into a large number of specialized forms with consistent analysis, and the delivery of grain-feeds to various distribution points in proper quantities and at the correct prices is indeed a highly complex business. It appears that the corporations and cooperatives servicing the

retail grain trade are doing a relatively efficient and competent job in selecting, assembling, and milling ration materials at the lowest cost. Most of these companies have either nation-wide connections or contacts, and are probably in a position to adopt as many of the advances in volume handling of grain as the particular requirements of the local market will permit.*

Sources of Supply.

Grain-feed needs in New Hampshire are met from mills within and without the State. However, the latter group accounts for about 65 percent of total sales. Where are the feed companies selling in New Hampshire located? What factors explain these locations? Where do mixed-feed ingredients originate? What services are performed by feed companies? How are retail feed stores supplied?

Number of Firms.

A compilation from the feedingstuff inspection lists for the State indicated 36 firms selling complete mixed grain-feeds in New Hampshire in 1953.† While Table 5 reflects states in which the home offices of these firms are located, there is some similarity between the patterns of home office and mill locations. In terms of number of firms, most brands of feed sold in New Hampshire originate from mills outside the State.

The 17 firms in New Hampshire, Massachusetts, and Vermont listed in Table 5 sell almost entirely within New England. Four are essentially cooperatives in type. Ten, including one cooperative, operate entirely within, or are intended to service primarily, the State of New Hampshire. The 19 firms listed in states outside New England sell over a wider geographical area (many on a near-national basis). The locations of these firms probably reflect, in order of numbers, these factors: (1) nearness to the concentration of the nation's milling capacity in the Great Lakes area; (2) nearness to surplus grain areas; and (3) relatively central location within area serviced.

Table 5. Location and Number of Firms Selling Complete Mixed Feeds in New Hampshire, 1953

State	No. of Firms
New York	11
New Hampshire	10
Massachusetts	4
Pennsylvania	3
Vermont	3
Illinois	2
Missouri	1
Michigan	1
Maryland	1
Total	36

Mixed Feed Ingredients.

The complexity of modern grain-feeds, and the magnitude of the task of assembling ingredients, is well illustrated by a compilation of the num-

* For a discussion of methods in the Southwest see Hudson, W. J., and E. K. Henschen, *The Transportation and Handling of Grain by Motortruck in the Southwest*, Produce and Marketing Administration, U.S.D.A., May, 1952.

†Davis, H. A., and V. F. Staab, *Inspection of Commercial Feedingstuffs*, made for the State Department of Agriculture, Station Bulletin 403, Agricultural Experiment Station, July, 1953.

ber of firms selling feed ingredients in New Hampshire.* Twenty-four separate states and several provinces of Canada are represented in Table 6. The number and location of these firms reflects primarily the supply sources for New Hampshire mills.

Milling-in-Transit Privileges.†

One of the principal reasons why feed mills serving New Hampshire can be located at various points of retail distribution in the State lies in the so-called milling-in-transit privileges permitted by the railroad tariff rules.

Freight rates are commonly higher per ton-mile for short distances than for long distances. This follows from the fact that rates must absorb two terminal charges irrespective of the length of haul. Thus, the sum of two local rates (Origin point A to Intermediate point B; Intermediate point B to Destination C) exceeds a through rate (Origin point A direct to Destination C, even through Intermediate point B). If this were the situation with respect to all feed ingredients, mills would tend to locate either at the source of most feed ingredients or at the point of sale of mixed feeds, depending upon the comparison between rates on ingredients and mixed feeds and upon other cost factors.

Milling-in-transit privileges, however, have tended to equalize the rate burden and permit the matter of mill location to be largely decided by other considerations. Shipments of grain, grain products and by-products, and certain related items‡ carry milling-in-transit privileges, i.e., the "stopping-off" of shipments of feed materials in transit at an intermediate point for the purpose of processing, mixing, and reshipping to a subsequent destination at no increase above the through rate (other than certain incidental charges for switching and transit privileges). This privilege rests upon the fiction that incoming transporation to the (intermediate) transit point and the outgoing transporation from the transit point, which in fact are separate and distinct shipments, constitute a single continuous shipment of the identical article from origin to final destination.

Rules governing transit privileges differ in the various railroad freight classification territories. The single compelling factor for the difference is the geographical location of the classification territory itself. New England, insofar as railroad territorial classification is concerned, is geographically located at the end of the line. One interesting feature of this revolves around the "Boston grouping". This means that the transportation charge from origin to any destination in New England is the same with the exception of arbitrary points on the Maine Central and Bangor and Aroostook Railroads, regardless of whether the shipment is "stopped off" at an intermediate point in New England for milling-in-transit purposes or diversion, or proceeds directly from origin to destination. Thus, with respect to rates on transit items alone, there is practically no locational advantage to be had within New England.

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* Davis, H. A. and V. F. Staab, op. cit., and *Registered Ingredient List*, New Hampshire Department of Agriculture, October 1, 1952.

† This section is based largely upon a paper by J. E. Bressette, General Traffic Manager, Chas. M. Cox Co., dated January 2, 1951, *Explanation of Milling-in-Transit Privileges as Applied in New England Territory*, and correspondence with Mr. Bressette in December, 1953, and January, 1954.

‡ Including brewers' and distillers' grains, soybeans, cottonseed, linseed, meals.

Certain other details with respect to New England transit privileges are worthy of note. Within New England (as throughout official territory) the privilege of applying the through rate from the transit stations is restricted to the transit portion of any mixed feed prepared at that point. Transit privileges within New England extend for a period of 12 months at through rates applicable from origin to final destination, with an extension of an additional 12 months for a small additional charge. This means grain can be stored enroute, milled, mixed, and shipped at the through rate, within the preceding time considerations. New England is very favorably located insofar as transit privileges are concerned on feedstuffs and grain from Canadian origins. This undoubtedly contributes to the importance of Canadian firms as suppliers of feed ingredients to New Hampshire mills (see Table 6).

The preceding discussion has merely scratched the surface of one of the most complicated transportation subjects, and there are many exceptions, modifications, and deviations from the general rules. However, to further classify the general principles, insofar as New England is concerned, two examples are presented below.

The rate for grain shipped from Chicago, Illinois, to St. Albans, Vermont, or to Portland, Maine, in early 1951, was 43½ cents per 100 pounds in lots. The Chicago-Portland rate was still 43½ cents per 100 pounds even though the shipment was "stopped off" at St. Albans for milling-in-transit or diversion.

In late 1953 carloads of brewers' grains moving from Milwaukee, Wisconsin, to Concord, New Hampshire, carried a rate of 44 cents per 100 pounds (plus 12 percent plus 3 percent tax), irrespective of whether the shipment moved directly from origin to destination, or "stopped off" in western New York for milling-in-transit.

The principal point to remember in connection with the milling-in-transit privilege is that it generally means for New Hampshire that the rate-cost of the transit portion of grain-feeds is the same irrespective of destination point or where milling is done. Since transit items constitute such a large proportion of grain-feeds (as can be observed in Table 7) the milling-in-transit privilege has much to do with the co-existence in the New Hampshire market of brands produced by local mills and mills at other widely separated points.

Non-Transit Ingredients.

It has been previously noted that grains, grain products and by-products, and related items (milling-in-transit items) included such feed ingredients as brewers' and distillers' grains, and soybeans, cottonseed, and linseed and their meals. The principal non-transit items in the average mixed grain-feed are, therefore, such things as meat scraps, fish meal, dried whey, powdered skimmilk, molasses, and various nutritive and biotic supplements.

Table 7 shows the estimated proportions of milling-in-transit items in selected grain-feeds. Non-transit items make up the balance. Obviously, these proportions are only approximations; deviations from these figures might occur due to different animal protein levels, relative ingredient prices, and a variety of other reasons. The point of predominance of milling-in-transit items in most grain-feeds, however, is well substantiated by these approximations.

Table 6. Location and Number of Firms Selling Mixed Feed Ingredients in New Hampshire, 1952 - 1953

Grains and Low-protein Grain Milled Products		Grain Protein Supplements		Vegetable Protein Supplements		Animal Protein Supplements		Mixed Supplements		Vitamin and Mineral Supplements and Biotics		Alfalfa Leaf Meal and Green Feed Mixes		Beet Pulp		Citrus Pulp	
Canada	15	New York	5	Canada	6	Mass.	5	New York	2	Mass.	1	Ohio	5	Canada	3	Fla.	10
Ill.	8	Canada	4	Ohio	5	N. Y.	4	Ill.	2	N. Y.	1	Nebr.	3	Colo.	1	Ga.	1
Mo.	4	Ill.	4	Tenn.	4	Ill.	4	Minn.	2	Pa.	1	Colo.	2	N. Y.	1		
Minn.	4	Ky.	2	N. Y.	4	Pa.	2	Wisc.	1	Ill.	1	Kans.	2				
Wisc.	4	Ind.	1	Ill.	3	Mich.	1	Md.	1	Wisc.	1	Mo.	2				
N. Y.	3	Mich.	1	Minn.	3	Wisc.	1	Pa.	1			Pa.	2				
Mich.	2	Pa.	1	Ga.	3	Maine	1	Mass.	1			Ill.	1				
Ind.	2	Mass.	1	Ind.	2	Cal.	1	Wash.	1			Mich.	1				
Iowa	2																
Ohio	1																
Pa.	1																
N. H.	1																

With respect to the effect of non-transit ingredients upon feed costs, it would obviously pay local mills to utilize local sources to the maximum, other things being equal. Indeed, the listing of firms selling mixed-feed ingredients in New Hampshire includes a number of New England seaboard suppliers of meat scraps, fish meal, milk by-products, and supplements.

Other than the preceding, it is difficult to generalize about the comparative advantage in transportation rates on non-transit items as between New Hampshire mills and those in other states. The transportation cost of non-transit items originating in the Midwest would tend to be about the same for all mills serving the feed needs of the State. For some other items like molasses, several sources of supply may be used alternatively or simultaneously.

Molasses is used in considerable amounts in mixed dairy feeds. Points of origin are associated with sugar refining, i.e., beet sugar refineries of the West, cane sugar refineries in Louisiana, seaboard refineries of off-shore production from such areas as Cuba and Puerto Rico, or refineries located in off-shore areas from whence molasses is shipped in ocean tankers. A nearby mill obtaining supplies via Atlantic port cities in tank trucks might have to pay local freight on this item in the mixed feed from the mill to point of destination. On the other hand, inland mills shipping molasses containing dairy feed to the State would have to pay two local freight charges on the item, one from ocean port or western refinery to the mill and the other from mill to destination.

Most shipments of meat scraps originate in the packing plants of the Midwest. Hence, there would be no general advantage in favor of nearby mills on this item except insofar as they could obtain supplies from nearby packing plants. Similar reasoning would hold for milk by-products. On items like fish meal, however, nearby mills would generally have a freight advantage over inland mills shipping into New Hampshire.

Table 7. Estimated Proportions of Milling-in-Transit Items in Selected Grain-Feeds[1]

Percentage Milling-in-transit Items	Poultry Feeds	Dairy Feeds
100%	Scratch Feed	
90–99	Chick starter All mash, grower All mash, layer All mash, turkey grower	20% dairy ration 32% supplement
80–89	All mash, breeder Reg. grower Reg. layer Reg. breeder All mash, turkey starter Reg. turkey grower Reg. turkey breeder	16% dairy ration 14% fitting Calf starter
70–79	High animal protein supplements	Calving ration
Under 70	Milk product supplements	Milk substitute

[1] Based upon composition data of New England College Conference rations and Eastern States feeds.

Comparative Advantage on Feed Ingredients.

It has been noted previously that transportation costs on milling-in-transit items shipped to New Hampshire in mixed feeds or for mixing by local mills are equalized, and most of the mills serving New Hampshire are not required to pay extra charges on milling-in-transit items used in their mixed feeds.* On non-transit items, the weight of advantage would appear to rest with local mills.

Primarily within the area of non-transit items each mill serving the local market would theoretically have the opportunity to exploit its particular location by using those ingredients and preparing those feeds which would take advantage of any rate advantages it might have. In practice, this opportunity would be somewhat limited by the consideration of obtaining approximate nutritional equality with the products of other mills.

Hence, it is concluded that local mills are generally in a favorable competitive position insofar as ingredient costs are concerned when compared to other mills shipping grain-feeds to New Hampshire. No information is available to enable an appraisal of comparative milling costs or total costs to be made. There is also a possible exception to the preceding statement, occurring when, and if, mills outside New Hampshire are able to control prices and/or supplies of certain key ingredients through corporate structures or informal agreements.

Transportation to Retail Distributing Points.

Because of the relatively smaller costs of out-shipments under milling-in-transit privileges, it is usually advantageous to grain mills to deliver large orders by freight rather than truck, even though the distance may not be great. This situation tends to favor a system of local retail outlets; discourage long-haul trucking of grain feed into New Hampshire from one central location to local users or handlers; and limits the effectiveness of either bagged or bulk delivery of grain-feed from local mills to distant users. Hence, the grain mills, both private and cooperative, have built up a network of local stores or local dealers, though some grain-feed moves direct from mill to farmer in carloads.

A survey of the grain companies serving New Hampshire indicated that over 95 percent of volume shipments from mills to local retail outlets or farmers arrived by rail. The exceptions to the general pattern occur where retail outlets or farmers are located relatively close to local mills or where rail facilities are no longer available.

A recent example of the latter situation is found in the discontinuance of the Suncook Valley Railroad line between Suncook and Barnstead. Established retail distributing points, such as those at Epsom, Chichester, and Pittsfield, which formerly received grain by railroad car, must now rely upon truck hauls from the mill or other railroad unloading points. The same is true of carlot distributors or farmers receiving in carloads.

Figure 3 shows the locations of railroad lines serving New Hampshire as of 1954, and some discontinued since 1940, and the location of retail dealers. With present technology and conditions, the abandonment of a

*One exception might be materials arriving at eastern port cities such as Boston. Inland mill locations would be at a disadvantage with respect to total rail freight on rail shipments originating at port cities, but the disadvantage would pertain only to that part of the feed which the mill reshipped back to coastal areas.

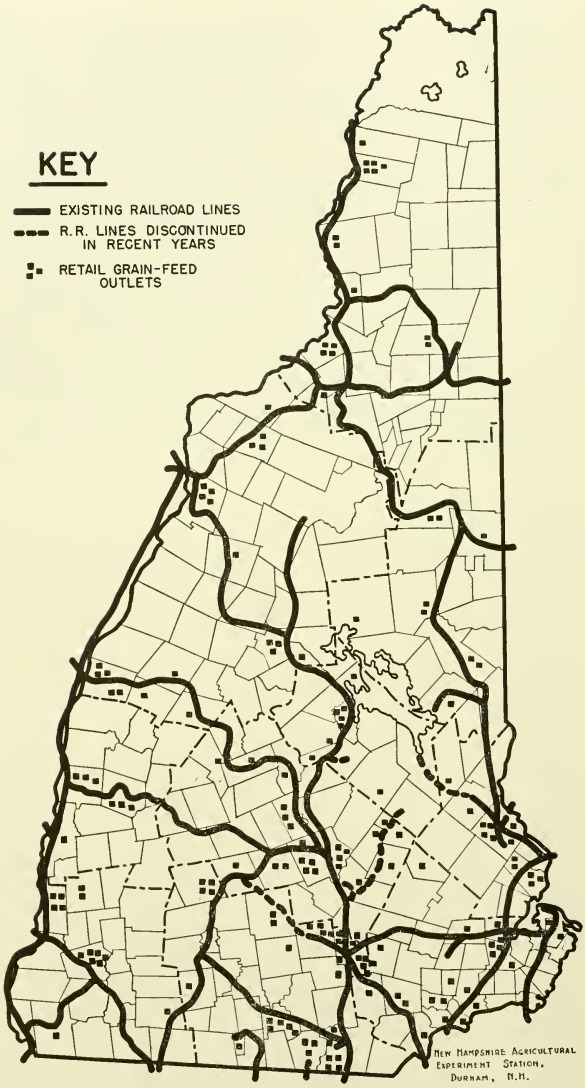
KEY
EXISTING RAILROAD LINES
R.R. LINES DISCONTINUED IN RECENT YEARS
RETAIL GRAIN-FEED OUTLETS
NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION, DURHAM, N.H.

Figure 3. Railroad lines serving New Hampshire and the location of 178 retail grain-feed outlets in 1954.

particular rail route is likely to have repercussions upon the costs of distributing grain-feeds. If there are retail grain-feed distributing points located on the line, the abandonment foreshadows one of the following if no alternative method of transportation grain-feeds is available which will be at least as cheap as by rail:

(1) The local storage and/or receiving point can be served from other points by truck, with local distribution by truck.

(2) Other storage points can take over the local truck distribution routes, with the local storage and/or receiving point eliminated.

If the company (or companies) operating from the local storage and/or receiving point allocates all of any additional distributing costs to the local territory in question, the effect on prices in the local territory may be quite noticeable. However, if any additional distributing costs are absorbed into the overall company operations (in the event of multiple-outlet firms), the effect on prices in the local territory will be less pronounced. But, to return to an earlier premise, it is likely that feed costs in the local territory will be increased, since under most conditions shipment to local storage and/or receiving points is cheaper by rail than by truck.

4. Company Policies, Pricing Practices, Terms

THE INFLUENCE of the parent company or supplying mill upon retail distribution is considerable. Directly or indirectly this influence is asserted through vertical integration (company owned stores or authorized dealerships), and/or by service or sales policies. Since about 65 percent of the grain-feed sold in New Hampshire is of brands milled by out-of-state companies, the situation in the State with respect to policies, pricing practices, and terms is probably not much different than in other Eastern areas.

In order to evaluate the preceding, questionnaires were sent to all of the feed companies whose brands were known to be sold in New Hampshire and a number of retail outlets were visited.

Method of Distribution.

Of 16 companies reporting, 5 made sales entirely through company-owned retail facilities. Nine companies sold at least one-half the total volume through company-owned retail outlets; 7 sold at least half the total volume through agents.

Ten companies reported 5 percent or less of total volume went directly from mill to farmer; two companies each reported 8-25, 26-49, and 50 and over percent of total volume going directly from mill to farmer. In some of the preceding instances, retail facilities were physically located at the mill.

All companies probably did some distributing from railroad cars; at least four concentrated on this method as much as possible. Some stressed pickup at the car by the producer.

Division of Market Area.

The question of dividing the State into market areas for individual retail outlets concerned 10 companies out of 16. The 10 companies took steps to minimize territorial conflicts through the main office, district offices, or local fieldmen, depending on the particular company's assignment of re-

sponsibilities. One company indicated it used local trade surveys as a basis for determining market areas. Other companies undoubtedly follow a similar approach. All companies with more than one company-owned store or agent had these dispersed to provide the opportunity for volume.

The companies indicating no participation by the main office in dividing territory for retail outlets probably found this step unnecessary. Some had only one retail outlet in the State. In some instances this was at or near the mill. Others had retail outlets at widely separated points, with distances between these points in excess of that which could feasibly be served from such points by truck.

Where the companies engaged in dividing territory into market areas for their own outlets, there was some coincidental similarity in market areas but for the most part each company's pattern differed from the others. This is a function of numbers of outlets, the exact location (based upon the random dispersion permitted by milling-in-transit equalization), and institutional considerations evolving from retail outlet acquisitions, consolidations of firms, and traditional servicing of particular territories from particular points. The most similarity in market areas was observed in and around the principal cities, in which a large number of different companies had retail outlets.

Retail outlet managers played an important role in delineating the final line between their units. Usually these arrangements were somewhat informal, but within the broad policies of the parent company or supplying mill.

Sales and Service Policy.

In addition to influencing method of distribution and division of the market area, parent companies or supplying mills play an important role in product differentiation and relationships with producers.

Industry people frequently refer to particular brands as "low-priced feeds", "high-priced feeds", or "quality feeds", though these terms are applied from the viewpoint of the particular individual's affiliation. One group contends that set formulas embodying the latest nutritional advances, with cost varying with weighted prices of the set quantities of the various ingredients, are the best buy for the producers. Another group stresses that it is just as progressive on nutritional matters, but shifts the proportions of different ingredients within a given analysis to take advantage of lower cost ingredients for its customers. Many companies carry a "standard", "regular", "utility", or "price" line, plus a "quality", 'high-energy", or "high-efficiency" line, in order to meet competition in both directions and offer its customers various alternatives.

All companies engaged to some extent in what has come to be called service work. Service is carried on in various ways and to varying degrees. With some companies or brands the main reliance for service work is the individual retail outlet, supplemented by a small main office and/or field service staff. Others place the greater emphasis upon a larger main office and/or field service staff, with the individual retail outlet in a secondary role. Service is generally "free"; actually it is an overhead cost borne to a degree by user and non-user alike. However, in many cases the particular service stands the individual producer using it less than if he actually hired it done. Service also brings to the producer a breadth of specialized skill and information he himself probably does not possess.

Pricing and Terms.

For about two-thirds of the companies submitting data, it was indicated that selling prices in retail outlets were generally fixed by the main office. This was accomplished through periodic price lists. For most of the others, the individual retail outlet determined its own markup over cost; some companies suggested markups over cost at each outlet. Quoting special quantity rates and submitting bids for sales to institutions were left to individual retail outlets in about two-thirds of the cases.

There was variability in the terms quoted relative to charge for delivery, credit, cash discounts, and quantity discounts. These often varied with different outlets affiliated with the same company. They also reflected the differing emphasis on method of sale from company to company.

Parent companies and/or their outlets obviously incur additional costs for deliveries and credit. There are also economies on quantity sales. Thus, the important question here is whether their customers obtain consideration for doing their own hauling, paying cash, or buying in quantity or pay the same as those who receive delivery service, use credit, and buy in smaller amounts. Within the past year some additional companies have moved from the latter policy toward the former, a desirable step in aligning services and prices.

At the time these particular data were collected most companies and a majority of the retail outlets contacted either charged for delivery directly or extended a discount on store pickups, sometimes coupled with considerations for cash or quantity. The usual charge for delivery or discount for pickup was 5 or 10 cents per 100 pounds. Where the producer unloaded from the car and hauled, he was extended an additional 5-10 cents per 100 pounds discount by some companies.

The subject of credit can be separated into short term (up to 30 days) or longer term (60-90 days or over). The avowed policy of only a few units was "no credit". Most units, however, extended "free" a courtesy period of 7-30 days in consideration of the spacing of producer income checks or the particular billing practices they followed. Within the short-term "free" credit range, there was sometimes no additional discount for spot cash. The usual discount for spot cash or payment within the short-term period was 5 to 10 cents per 100 pounds. On longer-term credit individual outlet and/or company management approval was generally required. Six percent interest was the rate usually charged on these accounts. Some units are known to be currently over-extended on longer-term credit, and there have been a certain number of forced settlements in the State in recent years. This situation is sometimes a danger of attempting to maintain or build volume in established territory or under conditions of unplanned production expansion. The indirect cost of precarious credit policies falls in the long run upon cash and credit customers alike.

Quantity discounts were quite generally specified; only a few units indicated none. At the retail unit level, the most common quantity discounts came at one and five tons. For the former, the average was 10 cents with a range of 5-20 cents per 100 pounds. For the latter, the average was 18 cents and the range 15-30 cents per 100 pounds. Reported carlot discounts ranged from 25-65 cents per 100 pounds, including unloading by the purchaser and cash. Where prices were quoted at producer's railroad point, $1.00 per ton discount was quoted on a straight vs. a mixed car.

In no instance encountered was there a specified penalty against the producer because of inconvenicence to the feed dealer in making deliveries. It is known that such a policy has been tried in other areas. In one instance, 10 cents per 100 pounds was assessed for second-floor deliveries. The general approach of New Hampshire outlets has been to work with the producer to improve the arrangements for receiving and handling at the farm, and/or to explore possibilities for using auxiliary unloading equipment, it being held that "competition" forces dealers to countenance many inconvenient or inefficient situations.

Steps by Companies to Promote Efficient Handling.

A series of questions was asked feed companies relative to steps they took to promote efficient handling at three stages: from the mill to the retail outlet, in retail outlets or warehouses, and between retail outlets or warehouses and the farm. Inquiry was also made relative to their policies on routes and making suggestions to producers on improved handling of grain feeds at the farm.

The steps listed, as adopted by various companies to promote efficient handling from the mill to the retail outlet, were as follows: all rail shipments; use of milling-in-transit to the maximum and over quickest routes; local trucking by dealers near mill; carload orders must be received 24 hours before manufacturing run is established; advance orders and car-door service; grouping localities for combined shipments; all carload shipments; loading according to approved methods to insure safe delivery; loading so car can be unloaded in proper sequence for delivery; prompt shipments to dealers; ship same day order received; feed made today, shipped tonight; belt conveyor from mill to car.

Some companies indicated they had no control over and/or information about what dealers did in outlets or warehouses and between these and the farm. The following were given as promoting efficient handling by retail dealers: determining best location for stock; handling and piling in groups; encouraging quick turnover of stock; following first-in - first-out policy on stock; advance orders and car-door service; use of fork-lift trucks, chutes, elevators.

Steps to promote efficient handling between the retail outlet or warehouse and the farm were listed as follows: regular scheduled weekly delivery routes; advance orders and cardoor service; deliver as much as possible from car to farm; set up routes on systematic basis to save mileage and time; prompt delivery; promote bulk feed; portable labor-saving devices.

Of 16 companies reporting, 7 indicated some to extensive participation by main or district offices and/or fieldmen in studying delivery route rearrangement. An additional four indicated knowledge of extensive study of the subject by retail outlets. These studies were described as "periodic", "every six months", and "annual".

Three companies indicated they refused business where purchases were too small to justify route operation. Four others indicated that they could usually work such business in on established routes or make other arrangements. Three companies indicated they had upon occasion refused business because producers refused to cooperate relative to convenience of unloading and handling at the farm.

About all of the companies indicated they made suggestions to farmers to promote more efficient handling of grain-feeds upon arrival and after

arrival at the farm. This was done through printed material, local dealers, and sales and service personnel. Answers to the question, "Are the farmers you service as a group willing to carry out programs to promote more efficient handling of grain upon arrival and after arrival at farm?" ranged from an unqualified "yes" to "relatively reluctant". Other comments were "varies", "for most part", "in some cases", "one out of four", "more aggressive farmers think of these things themselves". The reactions of individual dealers are discussed in a later section.

Relative Importance of Grain Feed Sales.

The majority of the companies contacted sold other lines of merchandise in addition to grain-feeds through their New Hampshire dealers. Out of 8 companies supplying details, 2 sold only grain-feeds. For the remaining 6, grain-feeds accounted for 72-90 percent of total sales. Other lines of importance were building supplies; farm, barn, and poultry equipment; seeds, fertilizer, spray materials; coal, oil, other fuel. There were considerable differences in the ranking of the secondary lines from company to company. Table 8 shows the relative importance of grain-feed sales and secondary lines for the 8 companies.

Table 8. Importance of Grain-Feed Sales and Secondary Lines for New Hampshire Retail Outlets of Eight Companies, 1953

Company	Percentage Distribution Dollar Sales		Second Most Important Group (Where Indicated)	
	Grain Feeds	Other Sales	% Total Sales	Group Designation
A	100.0			
B	100.0			
C	90.0	10.0	5.0	Poultry equipment
D	83.0	17.0	12.0	Seeds, fertilizer, spray material
E	83.0	17.0	12.0	Equipment
F	81.0	19.0	13.0	Building supplies
G	75.0	25.0		
H	72.0	28.0	10.0	Building supplies

5. Retail Outlet Characteristics

TO CONCLUDE the discussion of the characteristics of feed distribution and handling, there is herein presented description and data on retail outlet characteristics. Paralleling the aggregative and unit-size growth of poultry and dairy production has been the growth of larger-sized specialized grain-feed businesses. Formerly, distribution through such outlets as general stores, hardware stores, and other retail businesses primarily concerned with lines other than grain-feeds, was of greater relative importance. Now many

of these businesses handle no grain-feeds at all. With the growth of specialization in the grain-feed business has come the opportunity for operating economies and relatively lower net costs to producers.

Number and Location of Retail Outlets.

Figure 3 shows the location by towns of 178 retail grain dealers in New Hampshire in 1953. The numbers by counties were as follows: Hillsboro 40; Merrimack, 26; Rockingham, 23; Grafton, 22; Coos, 16; Cheshire, 14; Strafford, 13; Carroll, 9; Belknap, 8; and Sullivan, 7. The preceding numbers include some general stores, but probably do not fully reflect the number of general stores, hardware stores, and other retail businesses, primarily concerned with lines other than grain-feeds, who may still sell some grain-feeds.* However, the percentage of total grain-feeds sold through these latter outlets is undoubtedly small.

Figure 3 shows the predominant effect of railroad routes upon the location of retail outlets.

Importance of Multiple-Outlet Firms.

From data available, it seems reasonable to conclude that the majority of retail grain-feed outlets in New Hampshire are part of the distributive setups of firms supplying more than one outlet within the State. There were 78 retail outlets owned by or affiliated with three companies furnishing this type of data. The number of owned or affiliated outlets of seven companies (including the preceding three) was 100. These data are known to exclude two or three additional companies who have a substantial number of owned or affiliated retail outlets, and also do not include any companies with only two or three outlets in the State.

Size of Business.

The question of size of business of retail outlets can be approached in a number of ways. Herein, this is done on two bases: (1) comparison between areas (counties), and (2) measures of variation between individual units. The former is of limited use inasmuch as the political units (county) involved probably bear only partial relationship to the economic units (trade areas for retail outlets). However, such a comparison was the best available inasmuch as political units form the basis for the breakdown of pertinent statistical information. The latter approach is based upon data from about 25 individual retail outlets, or 14 percent of the total number shown in Figure 3. The outlets forming the sample are concentrated in the southeastern quarter of the State.

There are presented in Table 9 measures of the size of business of retail grain-feed outlets by counties and larger cities, as compiled from data presented earlier and from the 1948 census of Manufacturers. The data on average tons sold per dealer in 1953 show the tendency for a larger-than-average size of business in the leading feed-grain consuming counties of Hillsboro, Rockingham, and Merrimack. The above-average figures for Strafford and Sullivan counties result from the assumption that in-county dealers make sales approximating the county consumption. This is invalid for some areas, including the two preceding ones, as it is known that out-

* The New Hampshire Register for 1953 listed 326 general stores and 151 retail hardware stores. No information is available to indicate the number selling grain-feeds.

of-county dealers make greater quantitative sales within those counties than dealers from those counties do in other counties. If data permitted the adjustment of the figures on average tons sold per dealer for these variations, the figures for Belknap, Cheshire, Grafton, Hillsboro, Merrimack, and Rockingham counties would probably be adjusted upward; those for other counties, downward.

The data showing averages per establishment in 1948 reflect numbers of units and production patterns as of that year. With the expansion of poultry production, particularly since 1948, these relationships have undoubtedly been significantly modified. However, these series are interesting in that they show the relatively small average size of business still characterizing many retail grain-feed outlets. In another respect they show the location of relatively larger average-sized units in the larger cities than for counties as a whole.

Table 9. Measures of Size of Business, Retail Grain-Feed Outlets, by Counties and Cities

Political Unit	Number of Dealers[1]	Average Tons Sold Per Dealer 1953[2]	Averages per Establishment, 1948[3]			
			Sales Per Year ($1000)	Payroll Per Year ($1000)	Total Employees (No.)[4]	Full-time Paid Employees Nov. 15 (No.)
Counties:						
Belknap	8	1,220.0	272.0	14.0	6.4	5.6
Carroll	9	1,012.2	96.6	2.8	2.6	1.2
Cheshire	14	1,446.4	146.0	6.1	3.6	2.4
Coos	16	888.7	138.9	5.7	3.2	2.4
Grafton	22	1,244.5	165.3	8.7	4.1	3.1
Hillsboro	40	1,682.7	247.3	10.4	5.0	4.3
Merrimack	26	1,592.3	235.9	11.2	6.1	5.6
Rockingham	23	2,400.4	186.5	9.2	5.1	3.5
Strafford	13	1,900.0	31.3	4.7	3.7	2.2
Sullivan	7	1,784.3	151.0	8.2	4.0	3.2
State:	178	1,580.8	193.7	8.8	4.5	3.6
Cities:						
Claremont	3		200.0	9.2	4.2	3.7
Concord	9		326.0	13.2	5.8	5.0
Dover	5		304.5	11.5	4.7	4.0
Keene	6		196.3	7.3	4.2	2.8
Laconia	4					
Manchester	11		228.2	12.1	5.6	5.1
Nashua	6		313.6	11.0	5.2	4.6
Rochester	6		185.3	8.3	4.0	3.3

[1] Source: Figures 3.

[2] Source: Figures 3 and 1.

[3] Source: Census of Manufacturers, 1948. Derived from data for "hay, grain, feed stores" and "feed, farm, garden supply stores".

[4] Sum of total paid employees, workweek ended nearest November 15, and active proprietors and unpaid family workers, unincorporated businesses.

Average annual volume in 1953 for 22 retail grain-feed stores, mostly in the southeastern quarter of New Hampshire, was under 4,000 tons per

store. Fifty-four percent of the stores sold less than 2,000 tons per store annually. Frequency distribution by annual tonnage is given in Table 10.

Table 10. Frequency Distribution by Annual Quantity of Grain Feed Sold, 22 Stores

Tons of Grain-Feed Sold Per Year	Number of Stores	Average Tons Sold Per Store
Under 500	3	266
500–999	3	686
Under 1,000	6	952
1,000–1,999	6	1,430
Under 2,000	12	2,382
2,000–3,999	5	3,320
4,000–5,999	2	4,440
6,000–and over	3	14,821
	22	3,625

Percent of Delivered Sales.

One of the primary problems of retail grain-feed outlets is the question of delivery service. The characteristics evaluated in this and the two following sections are the proportions of delivered and non-delivered sales, average size of delivery, and frequency of delivery.

Of 412 farms in the Gilmanton-Barnstead area* 183 or 85.5 percent obtained delivery service. This area was selected because it contained many small, scattered farms, and would presumably point up some of the problems involved in delivery service.

For 24 retail grain-feed outlets, mostly in the southeastern quarter of New Hampshire, 83.1 percent of their sales were delivered (weighted average basis). These outlets as a group covered an area generally regarded as more productive for grain-feed businesses than the Gilmanton-Barnstead segment alone. The frequency distribution by percent of delivered sales is shown in Table 11.

Table 11. Frequency Distribution by Percent of Delivered Sales of Grain-Feed 24 Outlets

Percent of Delivered Sales	Number of Outlets
None	3
1– 9	1
10– 19	0
20– 29	1
30– 39	0
40– 49	0
50– 59	1
60– 69	1
70– 79	2
80– 89	6
90–100	9
	24

Outlets which made no delivered sales were all units selling relatively small amounts of grain-feed as a convenience and as a sideline to other enterprises. Other outlets delivering less than one-half of their volume stressed cardoor service.

Since all available data indicates more than four-fifths of the grain-feed tonnage sold is delivered, this subject is rather extensively analyzed in a subsequent part of this publication.

* Also includes some farms in adjacent towns.

Average Size of Delivery.

Available data indicate considerable variation in size of delivery, both to individual farms and on the basis of retail unit averages for all deliveries. In an earlier part of this publication it was pointed out that any feed distributor is likely to make the majority of his stops or sales (number, but not necessarily tonnage) to small units. A proof of this premise is offered by data on the 183 farms obtaining delivery service in the Gilmanton-Barnstead area (Table 12).

Table 12. Average Weekly Use of Grain-Feed on 183 Farms Obtaining Delivery Service in the Gilmanton-Barnstead Area

Average Weekly Use of Feed[1]	No. of Farms	Percent of Farms	Accumulative Percent of Farms	Total No. of Bags Weekly	Percent of Bags	Accumulative Percent of Bags	Number of Bags Delivered Per Farm
5 bags or less	120	65.6	65.6	183	9.4	9.4	1.5
6 to 10 bags	21	11.4	77.0	160	8.2	17.6	7.6
10 bags or less	141	77.0	77.0	343	17.6	17.6	2.4
11 to 20 bags	19	10.4	87.4	307	15.8	33.4	16.2
Over 20 bags	23	12.6	100.0	1,291	66.6	100.0	56.1
	183	100.0	100.0	1,941	100.0	100.0	10.6[2]

[1] Mostly delivered weekly.

[2] Average.

Seventy-seven percent of the farms (or route stops) involved used 10 bags or less, but accounted for only 18 percent of the total quantity. In contrast, the 13 percent of the farms using over 20 bags weekly bought about two-thirds of the total quantity. For this latter group, the average number of bags delivered per farm was 56.

Table 13. Variation in Average Size of Deliveries to 183 Farms in the Gilmanton-Barnstead Area by Stores

Store No.	No. of Farms Taking Deliveries	No. of Bags Delivered	Percentage of Farms	Percentage of Bags Delivered	No. of Bags per Delivery
1	25	377	13.7	19.4	15.1
2	40	157	21.9	8.1	3.9
3	10	111	5.4	5.7	11.1
4	48	302	26.2	15.5	6.3
5	6	89	3.3	4.6	14.8
6	3	45	1.6	2.3	15.0
7	8	33	4.4	1.7	4.1
8	12	98	6.6	5.1	8.2
9	11	80	6.0	4.1	7.3
10	8	88	4.4	4.5	11.0
11	5	38	2.7	2.0	7.6
12	7	523	3.8	27.0	74.7
	183	1,941	100.0	100.0	10.6

Information on deliveries to the 183 farms was also tabulated according to the stores from which deliveries originated. These data, presented in Table 13, indicate a range of 3.9 to 74.7 bags per average delivery for the 12 stores servicing these 183 customers. These figures are not inclusive of all the business done by the 12 stores, only of that done in the area surveyed.

Data were tabulated for six retail grain-feed units in Belknap County, including the entire delivery business for these units within and without the county. This information (Table 14) shows considerable variation in the average size of delivery per unit.*

Table 14. Average Size of Deliveries for Six Belknap County Retail Grain-Feed Units

Unit	Percent of Sales Delivered	Average No. of Stops per Route	Average No. of Bags Delivered per Stop	Range in Average No. of Bags per Stop per Route
A	75	5.3	7.6	3.2– 50.0
B	80	2.3	27.1	5.0–100.0
C	88	5.6	17.1	5.6–100.0
D	90	14.9	16.9	7.0– 75.0
E	6	5.0	8.0	
F	22	7.0	13.3	

Frequency of Delivery.

Less frequent delivery has often been suggested as a means of improving the efficiency of delivery route operation. It was being utilized to some extent in the areas surveyed.

Of 183 farms obtaining delivery service in the Gilmanton-Barnstead area, 132 or 72 percent obtained weekly delivery. Thirty-nine or 21 percent obtained delivery every two weeks; two obtained delivery once a month; and the remaining 10 obtained delivery 'occasionally'. However, the farms obtaining delivery service less frequently than once per week included a substantial number of small customers whose needs for a bag or two of grain-feed occurred at the wider intervals.

The six dealers located in Belknap County delivered 96 percent of their route quantities once per week and the remaining 4 percent once every two weeks. Under the latter category were included deliveries to several large customers as well as all customers obtaining delivery service through carlot distributors receiving shipments every other week.

Efforts to Improve Farm Receiving and Handling of Grain-Feeds.

Inquiry was made of 16 retail grain-feed outlets relative to difficulties in handling at the farm, improvements suggested by the dealer, and the percentage of customers making improvements in recent years. More than half of the outlets indicated considerable difficulties in making farm deliveries. The principal obstacles at the farm to rapid and efficient delivery were specified as: second and third floor unloading, carrying, dumping bags, old installations and remodeled barns with poor facilities, setting difficulties (snow, mud), need for two men on upstairs deliveries. Some

* For additional data and analysis relative to this point, see also N. H. Station Bulletin 427.

dealers indicated no second and third floor deliveries now, or that they used portable elevators or customers had installed them, and that many customers made alternative arrangements when driveway conditions were bad.

Some of the improvements suggested by dealers, field men, or through printed material were: eliminate clogging driveways and walkways, improve openings and stairways, install ramps and unloading platforms, minimize second and third floor unloadings, balance requirements per floor, rearrange grain rooms, prevent mice and rat damage, eliminate opening bags by delivery truck driver, install elevators or other auxiliary equipment, and convert to bulk feed.

Some dealers felt that bulk delivery brought the greatest improvement in making grain deliveries at the farm. Of the dealers indicating improvements through bulk, one estimated this applied to 35 percent of his customers. Others thought improvements had come about mainly through farm expansion and the incorporation of improved feed handling methods in the new buildings erected. One said "most" producers buying from him had made improvements in recent years. Two estimated the rate of improvement for all reasons at 5 percent; two at 10 percent; one at 20 percent; and one at 25 percent.

The general consensus was that the feed dealer was limited in his power to effectuate improvements in farm receiving and handling facilities, primarily because competition forced him to provide the services demanded by producers. Many larger producers are in an enviable position in this respect; a few take definite advantage of the situation. In some areas, and on some routes, the loss of a large account might mean a reduction in the dealer's business of one-fourth or one-fifth. Under such conditions, such a customer would be in a strong bargaining position. Many producers seemed willing to consider suggestions, and some to put them into effect, if cost outlays were not excessive and/or they could realize net savings thereby.

6. Conclusions

ALTHOUGH it was not the principal objective of this study on marketing grain-feeds, it was necessary to determine the institutional framework of the feed milling and distributing industry in order to find those areas where the system could be made more efficient.

With the resources devoted to this study, the area of retail distribution was selected for primary emphasis. The second bulletin in the series deals with that subject. Because of the relationship between achievement of delivery route efficiency and farm facilities for receiving and storing grains, and since the study of delivery routes made possible many farm contacts, the study was extended to the farm. The third bulletin of the series deals with prospects for improving the efficiency of the grain feeding operation on poultry and dairy farms.

The importance of the milling-in-transit privileges of railroad tariffs in determining feed prices at retail stores is considerable. Against the possibilities it offers for equalizing country prices must be balanced the economies of distributing locally from a store of efficient proportions.

Another significant point is the great importance of non-price considerations in competing for the farmers' feed business. Variations in formulas and performance make direct price comparisons a rather difficult task for the individual farmer.

As farm units increase in size and decrease in number, retail units can sell the same or larger quantities of feed to fewer customers. This may increase efficiency as well as changes in route arrangement, frequency of delivery, and rates of performance.

Management decisions relative to adoption of technological improvements, such as bulk feed, are frequently made on the basis of following the lead of competitors rather than solely on the basis of short-run costs and returns. Perhaps these are necessary in the long run for the firm to maintain its "share" of the market, but the end result is not always cost minimization.

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